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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/438,885	11/12/99	MASAZUMI	N 15162/01300

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EXAMINER

KOVALICK, V

ART UNIT

PAPER NUMBER

2673

DATE MAILED:

09/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/438,885

Applicant(s)

MASAZUMI ET AL.

Examiner

Vincent E Kovalick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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DETAILED ACTION

1. This Office Action is in response to Applicant's Application Serial. No. 09/438,885 with a Filing Date of 11/12/99.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. (U. S. Patent No. 5,748,277 taken with Wu et al. (U. S. Patent No. 5,933,203).

Relative to claim 1, Huang et al. **teaches** a visual display utilizing a chiral nematic, also called cholesteric, reflective bistable liquid crystal material and an electronics drive system for activating the display using efficient operation to provide highspeed updating of the display (col. 1, lines 7-11; col. 2, lines 43-67; col. 3, lines 1-36 and Fig. 7). Huang et al. further **teaches** a display device comprising: a liquid crystal display (LCD) having a liquid crystal material (col. 2, 43-45 and Fig. 7); a driver for driving said LCD (this feature is inherent in LCD displays and is well understood in the art; a controller for controlling said driver (col 2, lines 55-59).

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Huang et al. **does not specifically teach** (though he does suggest, col. 3, lines 41-54) said controller for controlling said driver to drive at least a part of said LCD by selectively using one of a first drive method and a second drive method which are different from each other in operational principle of said liquid crystal material.

Wu et al. **teaches** an apparatus for and method of driving a cholesteric liquid crystal (CLC) flat panel display (col. 3, lines 22-67 and col. 4, lines 1- 44). Wu et al. further **teaches** controller for controlling said driver to drive at least a part of said LCD by selectively using one of a first drive method and a second drive method which are different from each other in operational principle of said liquid crystal material (col. 3, lines 45-50).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Huang et al. the feature as taught by Wu et al. in order to drive the CLC display at full-motion video frame rates.

Regarding claims 2 and 7, Huang et al. **teaches** said LCD wherein the said liquid crystal display is capable of keeping an image having been formed thereon without consuming electric power (col. 3, lines 15-17 and 6, line 7-11).

Relative to claims 3 and 4, Huang et al. **teaches** said liquid crystal material comprises a cholesteric liquid crystal material; or wherein said cholesteric liquid crystal material comprises a chiral nematic liquid crystal material (col. 1, lines 7-11 and col. 2, lines 45-48 and 55-60).

Regarding claim 5, Huang et al. **teaches** a LCD wherein a first time period required to renew an image on said LCD by using said first drive method is longer than a second time period required

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to renew an image on said LCD by using said second drive method (col. 16 lines 15-16 and 23-24).

Relative to claim 6, Huang et al. **teaches** said LCD wherein a first electric power consumption required to keep an image on said liquid crystal display by using said first drive method is greater than a second electric power consumption required to keep an image on said LCD by using said second drive method (col. 5, lines 58-67 and col. 6, lines 1-11).

4. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. taken with Wu et al.

Relative to claims 8-9 Huang et al. **teaches** a display device comprising: a liquid crystal display (LCD) having a liquid crystal material (col. 2, lines 43-45 and Fig. 7); a driver for driving said LCD (this feature is inherent in LCD displays and is well understood in the art); and a controller for controlling said driver (col 2, lines 55-59). Huang et al. further **teaches** said display device wherein incomplete formation of an image on said LCD is possible by using said first method; and complete formation of an image on said liquid crystal display is possible by using said second drive method; wherein a first contrast of an image displayed on said LCD by using said first drive method is lower than a second contrast of an image displayed on said LCD by using said second drive method (col. 10, lines 20 31).

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Huang et al. **does not specifically teach** (though he does suggest, col. 3, lines 41-54) said controller for controlling said driver to drive at least a part of said LCD by selectively using one of a first drive method and a second drive method which are different from each other in operational principle of said liquid crystal material.

Wu et al. **teaches** controller for controlling said driver to drive at least a part of said LCD by selectively using one of a first drive method and a second drive method which are different from each other in operational principle of said liquid crystal material (col. 3, lines 45-50).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Huang et al. the feature as taught by Wu et al. in order to drive the CLC display at full-motion video frame rates.

5. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. Relative to claims 10-11, Huang et al. **teaches** a display device comprising: a LCD which is capable of keeping an image having been formed thereon without consuming electric power (col. 2, lines 55-67; col. 3, lines 1-5 and 11-17 and col. 6, lines 7-11); a driver for driving said LCD display (this feature is well know and in common practice in the art); a controller for controlling said driver to drive said LCD a plurality of times to form at least one image; wherein said controller is capable of changing the number of driving times for forming at least one image (col. 3, lines 37-40).

The difference between the teaching of Huang et al. and the instant invention is that wherein the instant invention addresses a reflective LCD device with a memory effect and a driving method

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thereof the teaching of Huang et al. addresses a reflective bistable LC material and an electronics drive system for activating the display using efficient operations to provide high-speed updating of the display.

It would have been obvious to a person of ordinary skill in the art at the time of the invention that the teaching of Huang et al. satisfies the limitation of claims 10-11 of the instant invention.

Regarding claims 12 and 13, Huang et al. **teaches** the LCD comprising a cholesteric LC material and/or a chiral nematic LC material (col. 1, lines 6-10).

Relative to claim 14, it is well understood in the art and in common practice wherein a LCD comprise a plurality of scan electrodes and a plurality of data electrodes.

6. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. as applied to claim 14 in item 5 hereinabove, and further in view of Tsuboyama et al. (U. S. Patent No. 5,963,190).

Relative to claims 15-16, Huang et al. **does not teach** the display device wherein the controller is capable of controlling the display drivers so as to execute the steps of: (a) addressing a plurality of scan electrodes and a plurality of data electrodes to reset an area of said liquid crystal display device by the plurality of scan electrodes and a plurality of data electrodes; (b) addressing a plurality of scan electrodes sequentially; (c) addressing selected ones of said data electrodes synchronizing with the sequential addressing of the scan electrodes in the step (b); and (d) repeating the steps (b) and (c) a plurality of times without interposing the step (a).

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Tsuboyama et al. **teaches** a driving method for display device and display (col. 2, lines 57-67; col. 3, lines 1- 20 and Fig. 3). Tsuboyama et al. further teaches a display device wherein the controller is capable of controlling the display drivers so as to execute the steps of: (a) addressing a plurality of scan electrodes and a plurality of data electrodes to reset an area of said liquid crystal display device by the plurality of scan electrodes and a plurality of data electrodes; (b) addressing a plurality of scan electrodes sequentially; (c) addressing selected ones of said data electrodes synchronizing with the sequential addressing of the scan electrodes in the step (b) (col. 6, lines 15-22 and Fig. 3; and (d) repeating the steps (b) and (c) a plurality of times without interposing the step (a) (col. 6, lines 15-22).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught Huang et al. the feature as taught by Tsuboyama et al. in order to incorporate the reset and refresh features in the display control means.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	5,598,229	Okada et al.
U. S. Patent No.	5,384,067	Doane et al.
U. S. Patent No.	5,274,484	Mochizuki et al.
U. S. Patent No.	5,251,048	Doane et al.

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Responses

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Vincent E. Kovalick** whose telephone number is **(703) 306-3020**. The examiner can normally be reached on Monday-Thursday from 9:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Bipin Shalwala**, can be reached at **(703) 305-4938**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

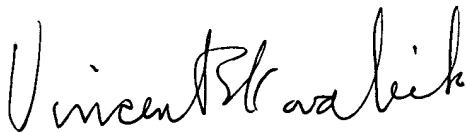
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Inquires

9. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(703) 306-0377**.



Vincent E. Kovalick



**BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**